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2 2. The method of claim 1, wherein the programming objects have
3 interfaces through which the methods can be accessed.

4
5 3. The method of claim 1, wherein the programming objects comprise
6 COM objects.

7
8 4. The method of claim 1, wherein said factoring comprises creating a
9 hierarchy of object interfaces in which certain interfaces can inherit from other
10 interfaces.

11
12 5. The method of claim 1, wherein said factoring comprises creating a
13 hierarchy of object interfaces in which certain interfaces can aggregate with other
14 interfaces.

15
16 6. The method of claim 1 further comprising instantiating a plurality of
17 programming objects across a process boundary.

18
19 7. The method of claim 1, further comprising instantiating a plurality of
20 programming objects across a machine boundary.

21
22 8. The method of claim 1, wherein the criteria is based, at least in part,
23 on the manner in which particular functions behave.
24
25

1 9. The method of claim 8, wherein the manner includes a consideration
2 of the types of operating system resources that are associated with the operation of
3 a function.

4
5 10. The method of claim 8, wherein the manner includes a consideration
6 of whether a particular function creates an operating system resource.

7
8 11. The method of claim 8, wherein the manner includes a consideration
9 of whether a particular function operates upon an operating system resource.

10
11 12. The method of claim 1, wherein the criteria is based, at least in part,
12 on the manner in which particular functions behave, wherein the manner includes:

13 a consideration of the types of operating system resources that are
14 associated with the operation of a function; and

15 a consideration of whether a particular function creates an operating system
16 resource.

17
18 13. The method of claim 1, wherein the criteria is based, at least in part,
19 on the manner in which particular functions behave, wherein the manner includes:

20 a consideration of the types of operating system resources that are
21 associated with the operation of a function call; and

22 a consideration of whether a particular function operates upon a given
23 operating system resource.

1 14. (Amended) A method of factoring operating system functions
2 comprising:

3 factoring a plurality of operating system functions that are used in
4 connection with operating system resources into first groups based upon first
5 criteria;

6 factoring the first groups into individual sub-groups based upon second
7 criteria; and

8 assigning each sub-group to its own programming object interface, wherein
9 a programming object interface represents a particular object's implementation of
10 its collective methods effective to provide an object-oriented operating system.

11
12 15. The method of claim 14, wherein the first criteria is based upon the
13 type of resource that is associated with an operation of a function.

14
15 16. The method of claim 14, wherein the second criteria is based upon
16 the nature of an operation of a function on a particular resource.

17
18 17. The method of claim 16, wherein said nature concerns whether a
19 function creates a resource.

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21 18. The method of claim 16, wherein said nature concerns whether a
22 function does not create a resource.

23
24 19. The method of claim 14, wherein the first criteria is based upon the
25 type of resource that is associated with an operation of a function, and the second

1 criteria is based upon the nature of an operation of a function on a particular
2 resource.

3
4 20. The method of claim 14, wherein at least one interface inherits from
5 another interface.

6
7 21. The method of claim 14, wherein at least one interface aggregates
8 with another interface.

9
10 22. The method of claim 14 further comprising instantiating a plurality
11 of programming objects across a process boundary.

12
13 23. The method of claim 14 further comprising instantiating a plurality
14 of programming objects across a process boundary and a machine boundary.

15
16 24. (Amended) A method of factoring operating system functions
17 comprising:

18 factoring a plurality of operating system functions into interface groups
19 based upon the resources with which a function is associated;

20 factoring the interface groups into interface sub-groups based upon each
21 function's use of a handle that represents a resource; and

22 organizing the interface sub-groups so that at least one of the interface sub-
23 groups inherits from at least one other of the interface sub-groups.

1 25. The method of claim 24, wherein said organizing comprises
2 aggregating at least one of the interface sub-groups.

3
4 26. The method of claim 24, wherein the interface sub-groups are
5 associated with COM objects.

6
7 27. The method of claim 24, wherein the factoring of the interface
8 groups into interface sub-groups comprises considering whether a function creates
9 a handle.

10
11 28. The method of claim 24, wherein said organizing comprises
12 aggregating at least one of the interface sub-groups, and wherein the factoring of
13 the interface groups into interface sub-groups comprises considering whether a
14 function call creates a handle.

15
16 29. (Amended) An operating system application program interface
17 embodied on a computer-readable medium comprising a plurality of object
18 interfaces, wherein each object interface is associated with an object that includes
19 one or more methods that are associated with and can call functions of an
20 operating system that does not comprise the object interfaces, individual objects
21 being configured to be instantiated in process, locally, or remotely.

22
23 30. The operating system application program interface of claim 29,
24 wherein the object interfaces are arranged in groups in accordance with the types
25 of objects with which their operation is associated.

1
2 31. The operating system application program interface of claim 29,
3 wherein the methods within some of the interfaces are arranged in accordance with
4 whether they create an object.

5
6 32. The operating system application program interface of claim 29,
7 wherein the methods within some of the interfaces are arranged in accordance with
8 whether they do not create an object.

9
10 33. The operating system application program interface of claim 29,
11 wherein the methods within some of the interfaces are arranged in accordance with
12 whether they operate upon an object.

13
14 34. The operating system application program interface of claim 29,
15 wherein at least some of the object interfaces are arranged so that they inherit from
16 other of the object interfaces.

17
18 35. The operating system application program interface of claim 29,
19 wherein at least some of the object interfaces are arranged so that they aggregate
20 with other of the object interfaces.

21
22 36. An operating system comprising:
23 a plurality of programming objects having interfaces, wherein the
24 programming objects represent operating system resources, and wherein the
25

1 interfaces define methods that are organized in accordance with whether they
2 create an operating system resource or not;

3 wherein the programming objects are configured to be called either directly
4 or indirectly by an application; and

5 wherein the methods are configured to call operating system functions
6 responsive to being called directly or indirectly by an application.

7
8 37. The operating system of claim 36, wherein some of the objects are
9 disposed across at least one process boundary.

10
11 38. The operating system claim 36, wherein some of the objects are
12 disposed across at least one machine boundary.

13
14 39. (Amended) The operating system of claim 36, wherein at least some
15 of the objects are disposed across at least one process boundary and at least one
16 machine boundary.

17
18 40. (Amended) The operating system of claim 36, wherein the objects
19 comprise COM objects.

20
21 41. (Amended) A method of converting an operating system from a non-
22 object-oriented format to an object oriented format, wherein the operating system
23 includes a plurality of operating system functions that are callable to create or use
24 operating system resources, the method comprising:

1 defining a plurality of programming object interfaces that define methods
2 that correspond to the operating system functions, wherein programming objects
3 that support the interfaces are callable either directly by an application that makes
4 object-oriented calls, or indirectly by an application that makes function calls;

5 calling a programming object interface either directly via an object-oriented
6 call, or indirectly via an indirection that transforms a function call into an object-
7 oriented call; and

8 responsive to said calling, calling an operating system function with a
9 method of the programming object that supports said programming object
10 interface.